

A Macroeconomic Analysis

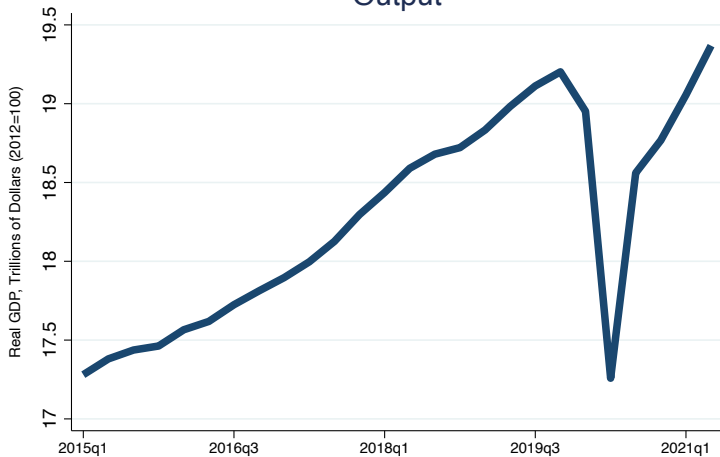
Pandemic and Policy

Joseph M. Santos

Dykhouse Scholar in Money, Banking, and Regulation
Ness School of Management and Economics

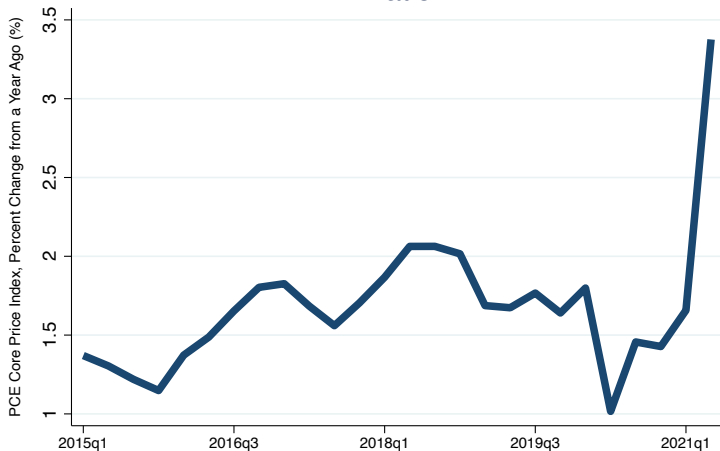
Overview

Output



Source: Federal Reserve Bank of St. Louis (FRED) GDPC1.

Inflation



Source: Federal Reserve Bank of St. Louis (FRED) JCXFE.

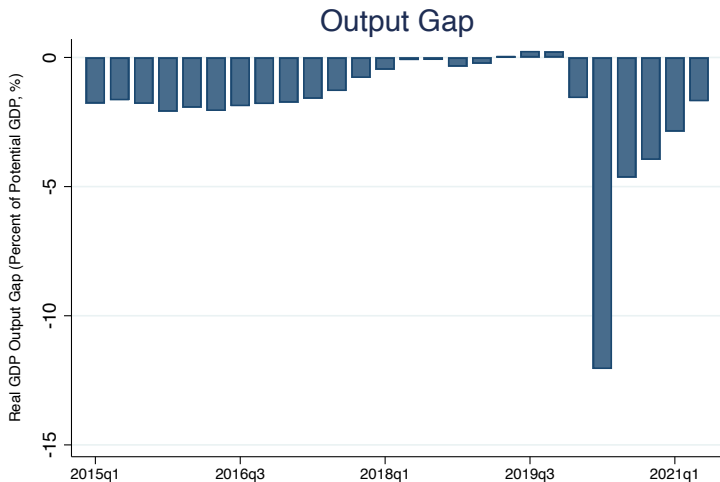
Gaps

Gaps

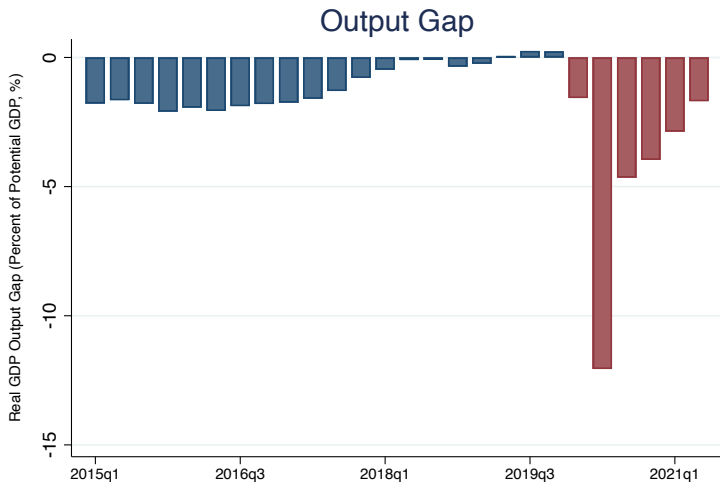
Output | Employment | Inflation

Gaps

Output | Employment | Inflation



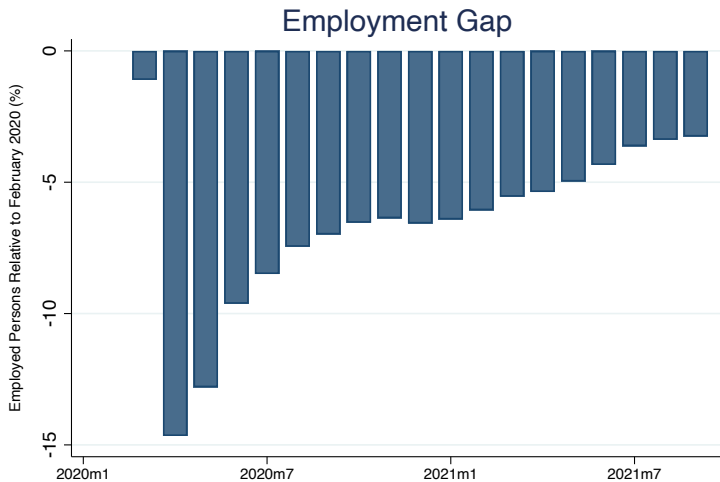
Source: Federal Reserve Bank of St. Louis (FRED) GDPC1 & GDPPOT.



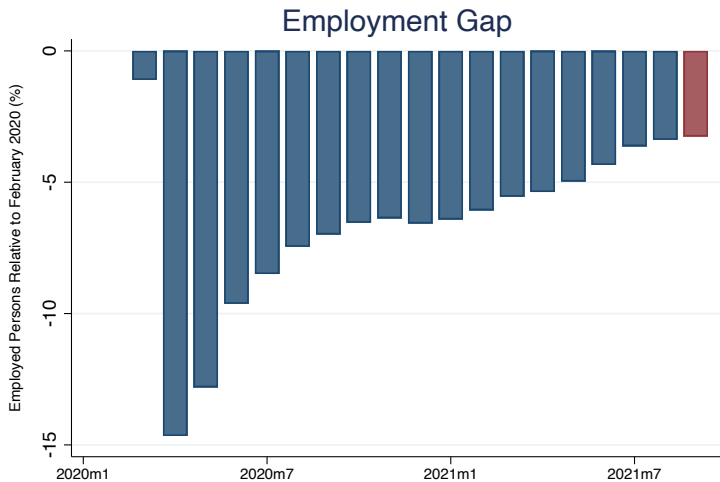
Source: Federal Reserve Bank of St. Louis (FRED) GDPC1 & GDPPOT.

Gaps

Output | **Employment** | Inflation

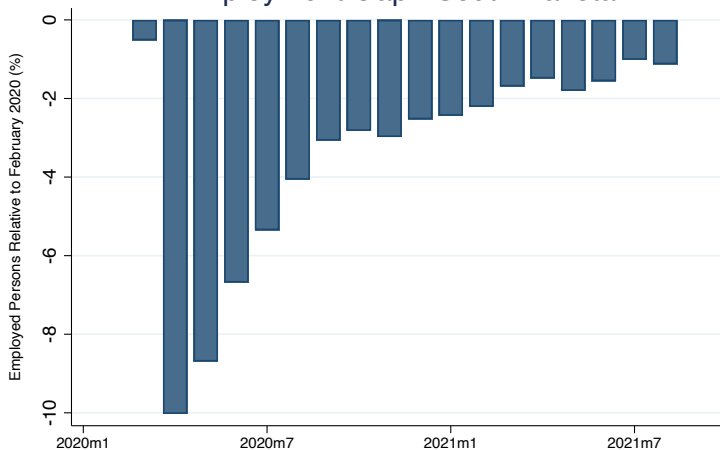


Source: Federal Reserve Bank of St. Louis (FRED) series PAYEMS.



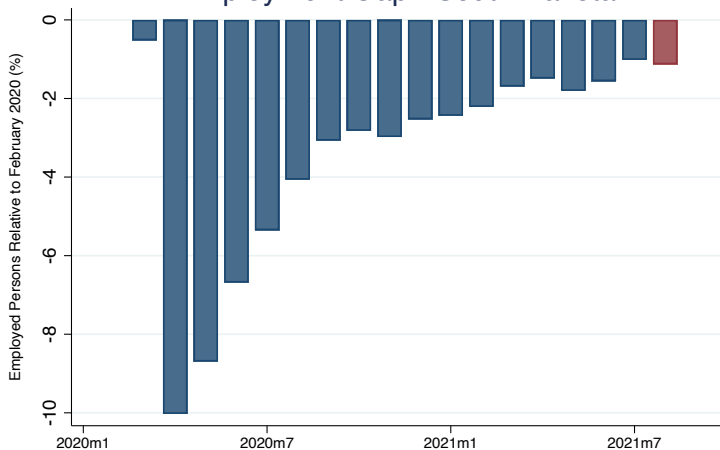
Source: Federal Reserve Bank of St. Louis (FRED) series PAYEMS.

Employment Gap - South Dakota



Source: Federal Reserve Bank of St. Louis (FRED) series SDNA.

Employment Gap - South Dakota

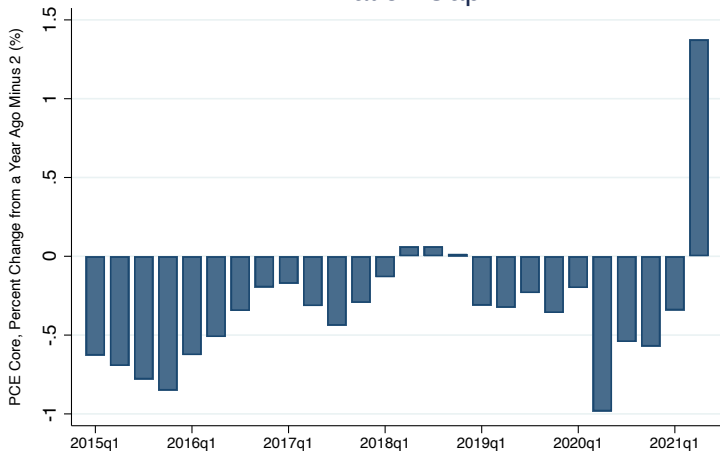


Source: Federal Reserve Bank of St. Louis (FRED) series SDNA.

Gaps

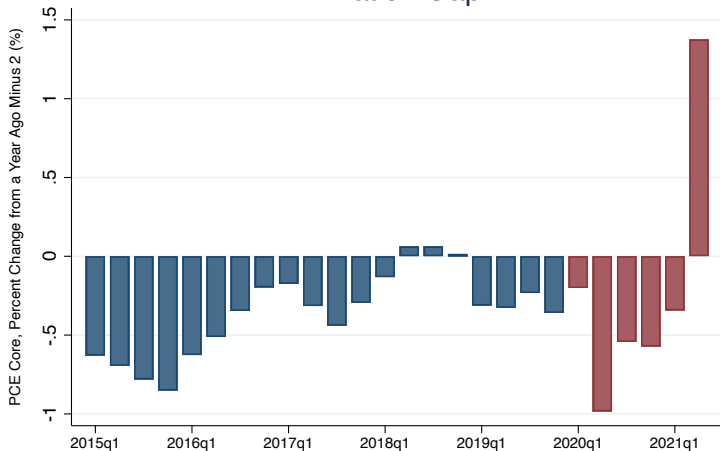
Output | Employment | Inflation

Inflation Gap



Source: Federal Reserve Bank of St. Louis (FRED) JCXFE.

Inflation Gap



Source: Federal Reserve Bank of St. Louis (FRED) JCXFE.

Gaps

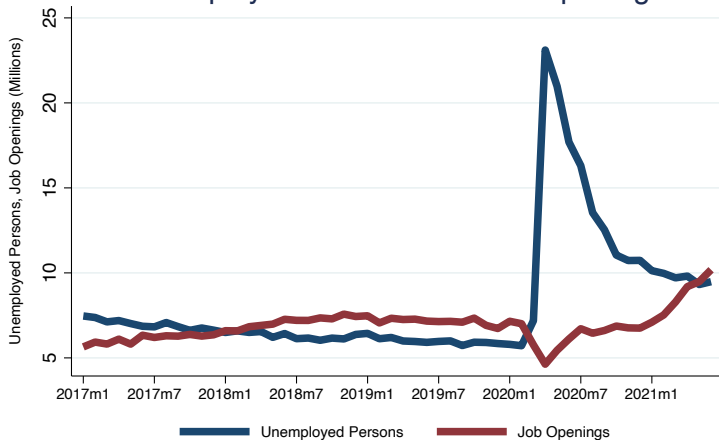
Output | **Employment** | Inflation

Gaps

Output | Employment | Inflation

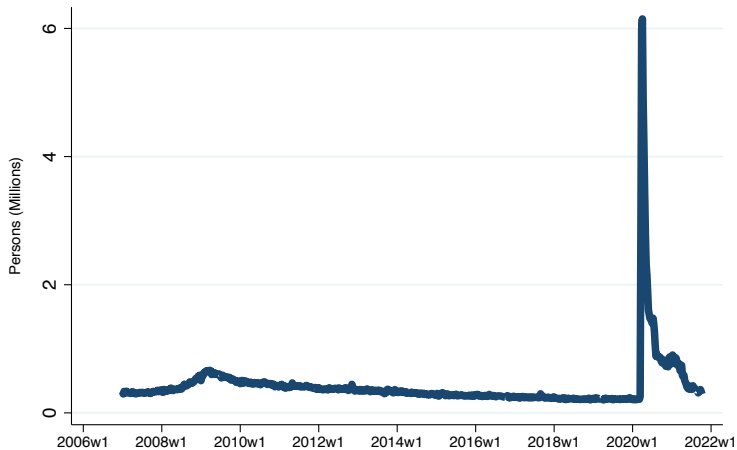
Jolted

Unemployed Persons and Job Openings



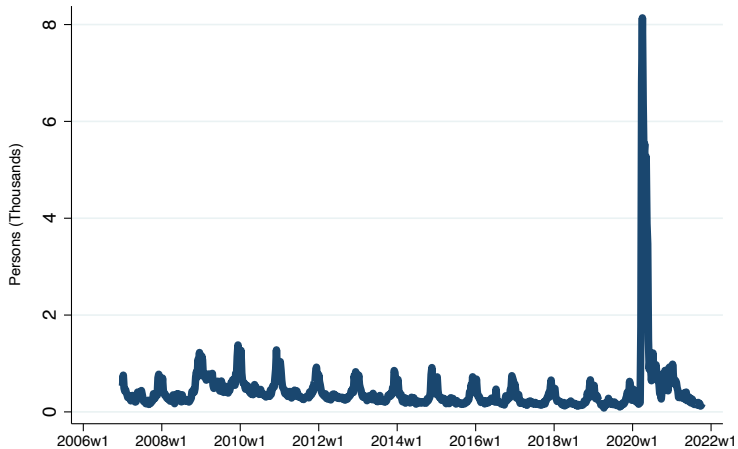
Source: Federal Reserve Bank of St. Louis (FRED) series JTSJOL & UNEMPLOY.

Initial Jobless Claims



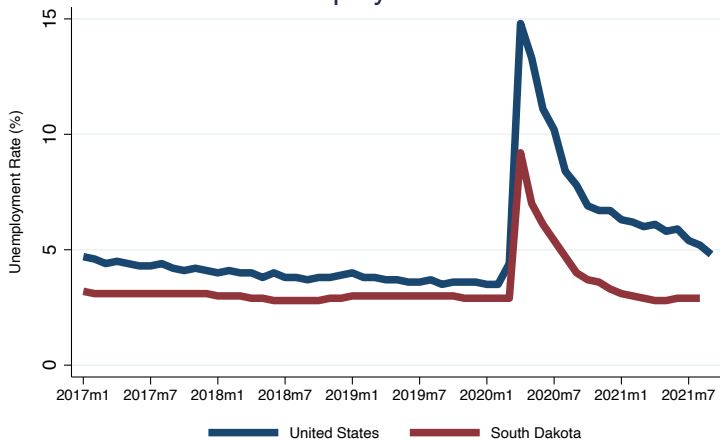
Source: Federal Reserve Bank of St. Louis (FRED) series ICSA.

Initial Jobless Claims - South Dakota



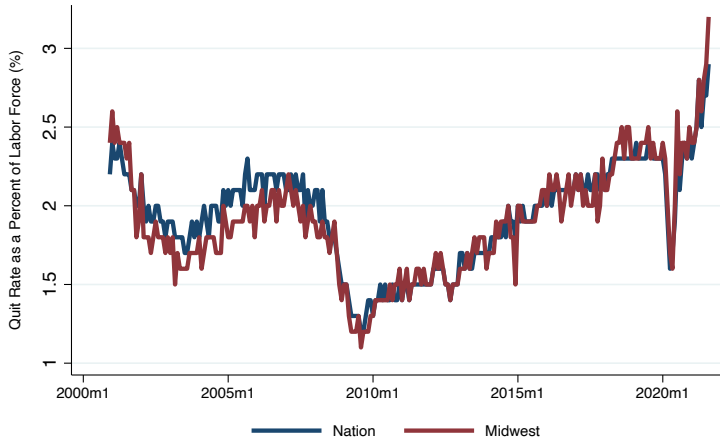
Source: Federal Reserve Bank of St. Louis (FRED) series SDICLAIMS.

Unemployment Rates



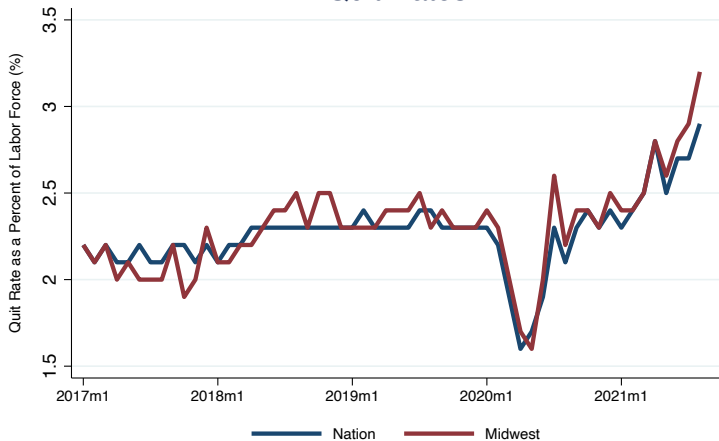
Source: Federal Reserve Bank of St. Louis (FRED) series UNRATE & SDUR.

Quit Rates



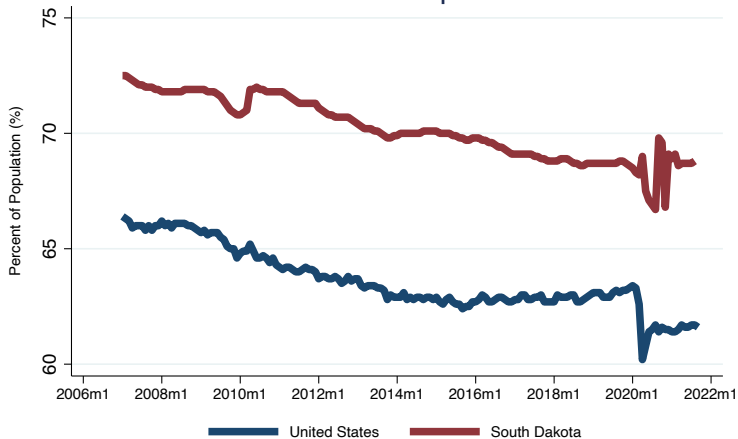
Source: Federal Reserve Bank of St. Louis (FRED) series JTSQUR & JTS00MWQUR.

Quit Rates



Source: Federal Reserve Bank of St. Louis (FRED) series JTSQUR & JTS00MWQUR.

Labor-Force Participation Rates



Source: Federal Reserve Bank of St. Louis (FRED) series CIVPART & LBSSA46.

Gaps

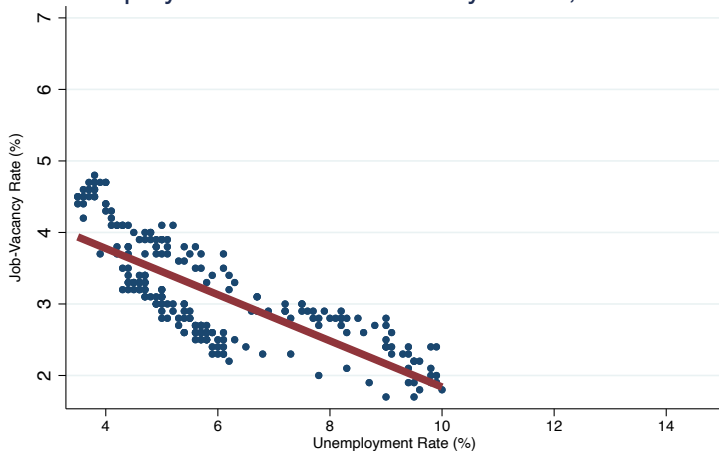
Output | Employment | Inflation

Gaps

Output | Employment | Inflation

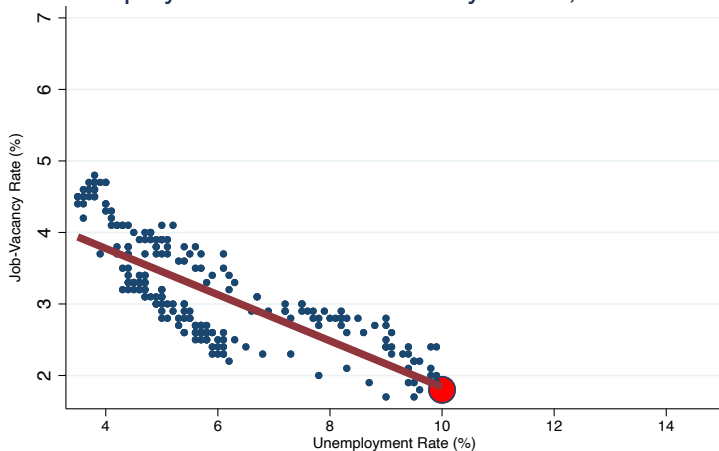
The U-V Curve

Unemployment and Job-Vacancy Rates, 1990 - 2021



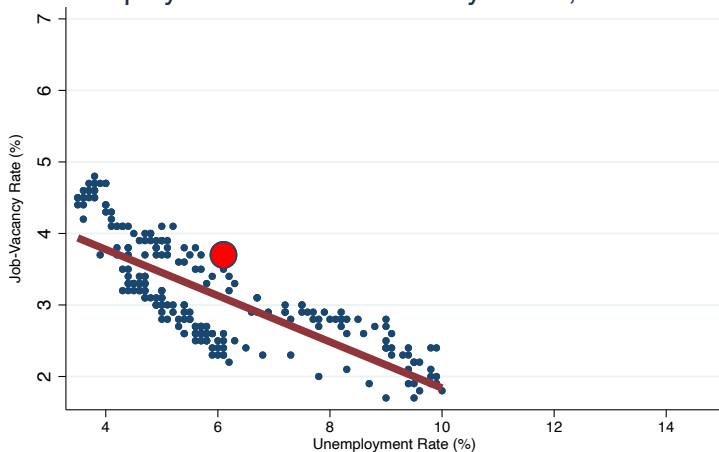
Source: Federal Reserve Bank of St. Louis (FRED) series UNRATE & JTSJOR.

Unemployment and Job-Vacancy Rates, 1990 - 2021



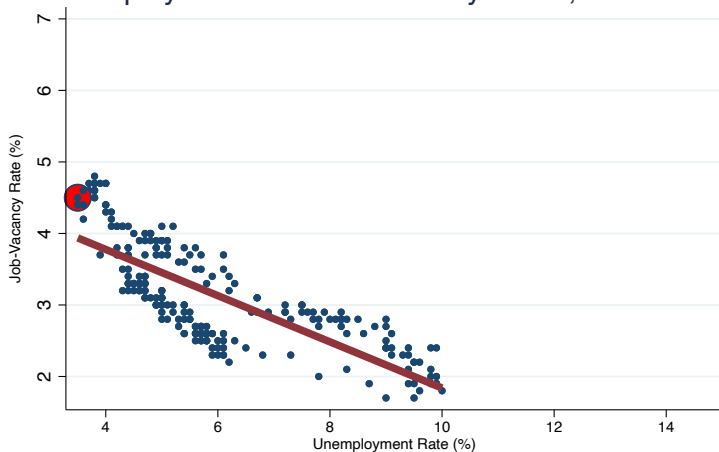
Source: Federal Reserve Bank of St. Louis (FRED) series UNRATE & JTSJOR.

Unemployment and Job-Vacancy Rates, 1990 - 2021



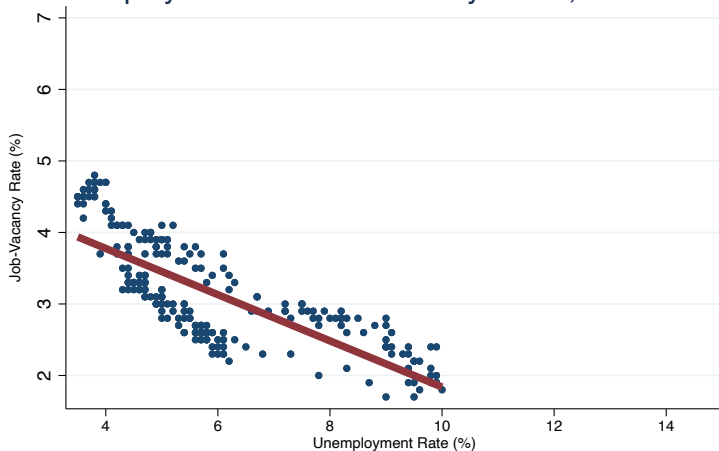
Source: Federal Reserve Bank of St. Louis (FRED) series UNRATE & JTSJOR.

Unemployment and Job-Vacancy Rates, 1990 - 2021



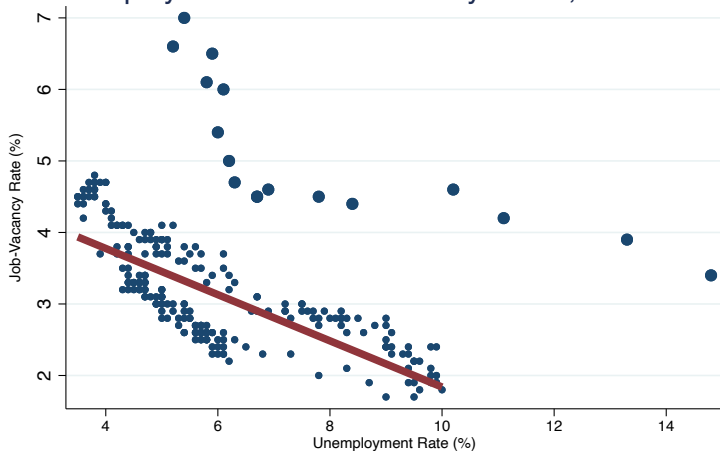
Source: Federal Reserve Bank of St. Louis (FRED) series UNRATE & JTSJOR.

Unemployment and Job-Vacancy Rates, 1990 - 2021



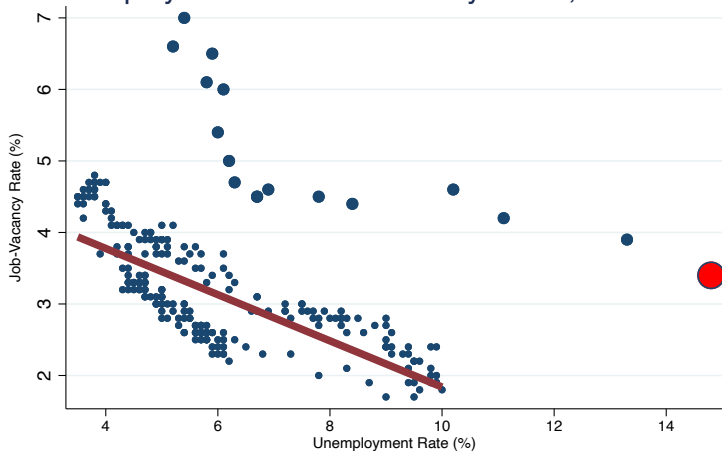
Source: Federal Reserve Bank of St. Louis (FRED) series UNRATE & JTSJOR.

Unemployment and Job-Vacancy Rates, 1990 - 2021



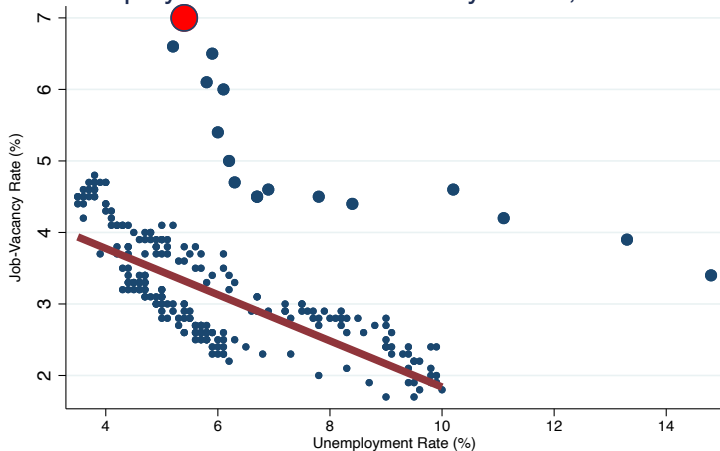
Source: Federal Reserve Bank of St. Louis (FRED) series UNRATE & JTSJOR.

Unemployment and Job-Vacancy Rates, 1990 - 2021



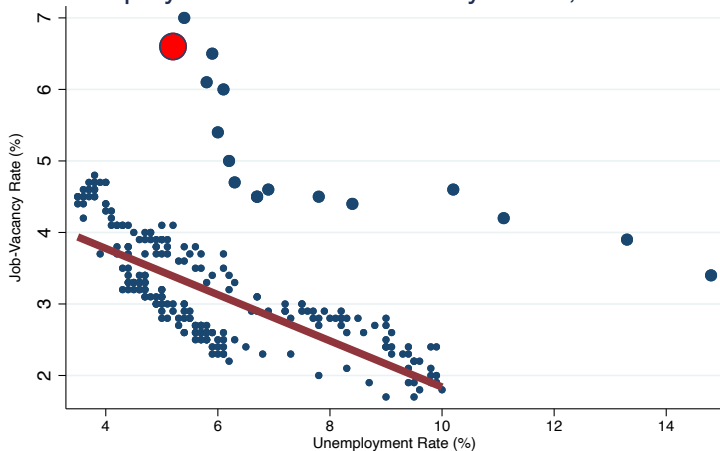
Source: Federal Reserve Bank of St. Louis (FRED) series UNRATE & JTSJOR.

Unemployment and Job-Vacancy Rates, 1990 - 2021



Source: Federal Reserve Bank of St. Louis (FRED) series UNRATE & JTSJOR.

Unemployment and Job-Vacancy Rates, 1990 - 2021



Source: Federal Reserve Bank of St. Louis (FRED) series UNRATE & JTSJOR.

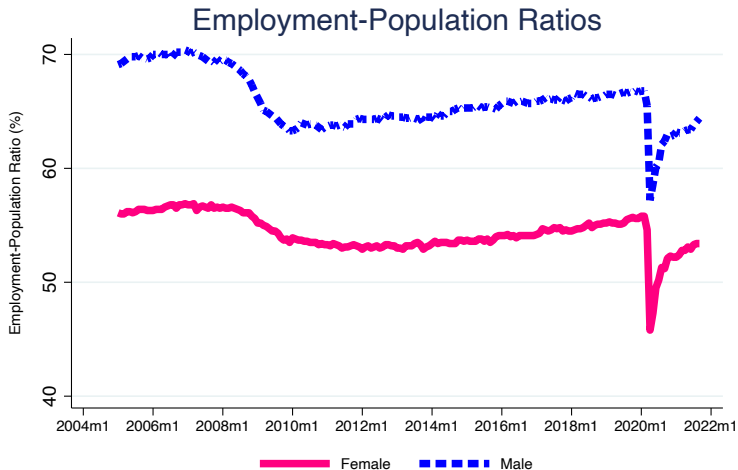
Gaps

Output | Employment | Inflation

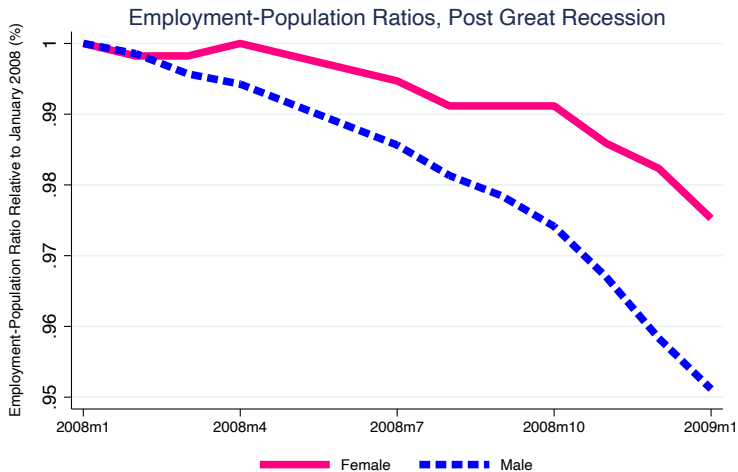
Gaps

Output | Employment | Inflation

Employment-Population Patterns

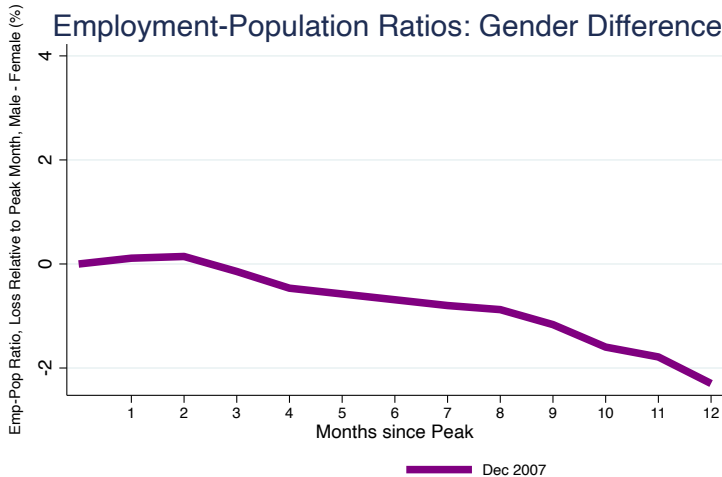


Source: Federal Reserve Bank of St. Louis (FRED) series LNS12300001 & LNS12300002.



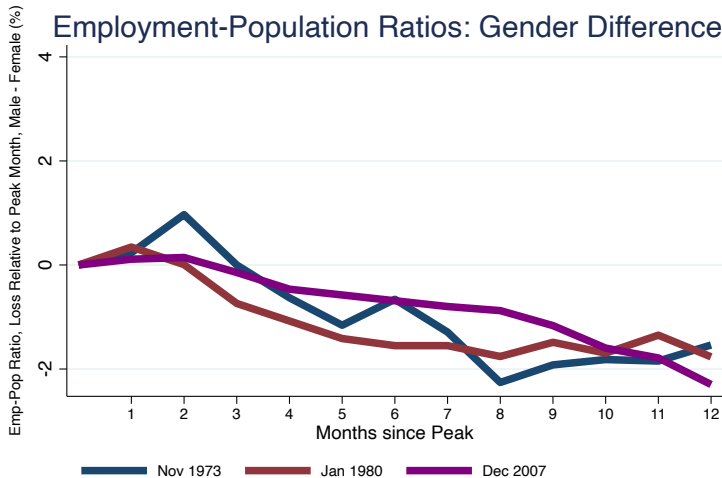
Source: Federal Reserve Bank of St. Louis (FRED) series LNS11300001 & LNS11300002.

Employment-Population Ratios: Gender Differences



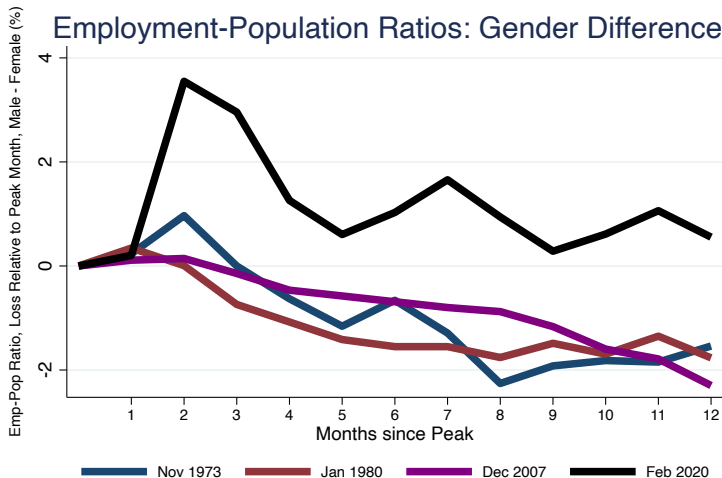
Source: Federal Reserve Bank of St. Louis (FRED) series LNS12300001 & LNS12300002.

Employment-Population Ratios: Gender Differences



Source: Federal Reserve Bank of St. Louis (FRED) series LNS12300001 & LNS12300002.

Employment-Population Ratios: Gender Differences



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Gaps

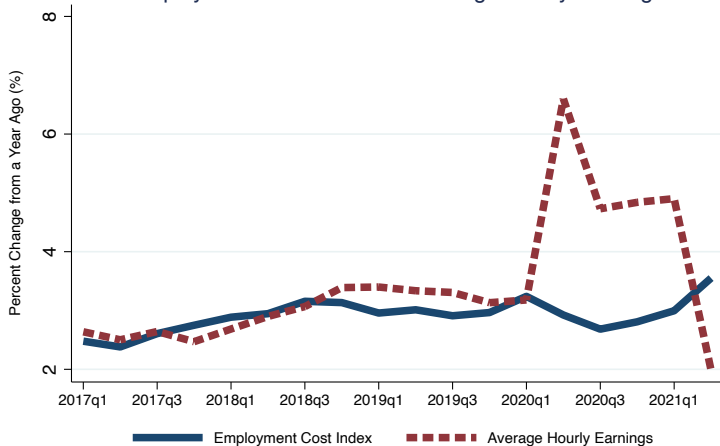
Output | Employment | Inflation

Gaps

Output | Employment | Inflation

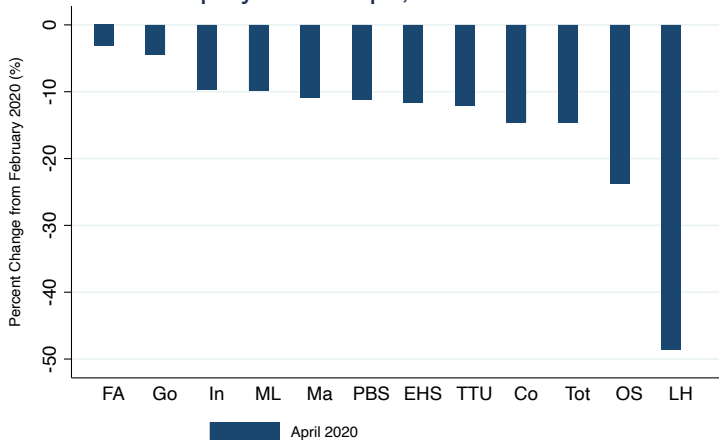
Bargaining power

Employment Cost Index and Average Hourly Earnings



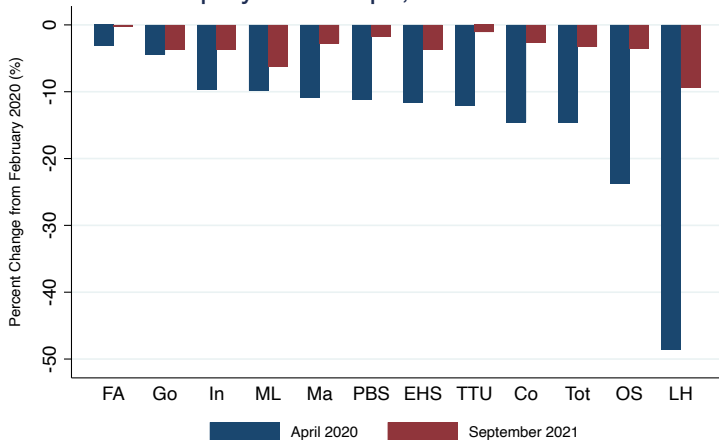
Source: Federal Reserve Bank of St. Louis (FRED) series ECIWAG & CES0500000003.

Employment Gaps, Select Industries



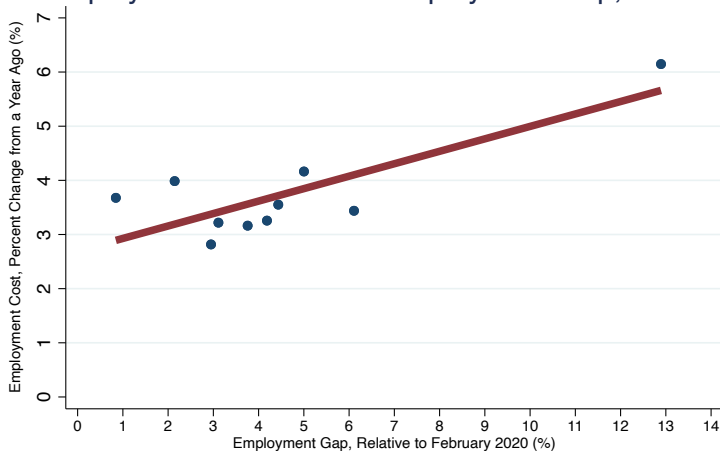
Source: Federal Reserve Bank of St. Louis (FRED) categorical series and author's calculations.

Employment Gaps, Select Industries



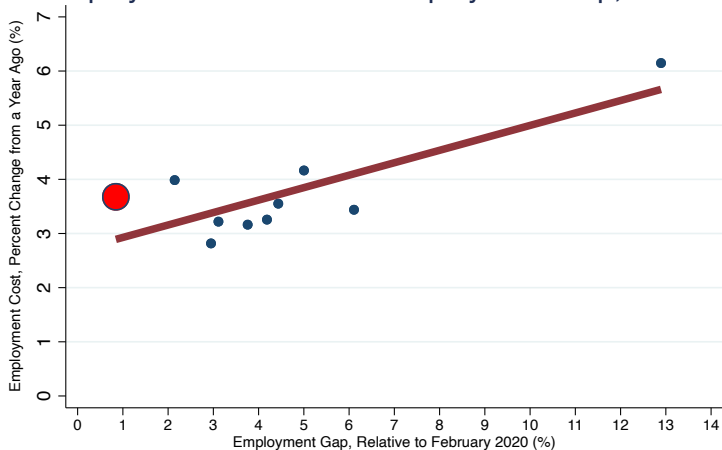
Source: Federal Reserve Bank of St. Louis (FRED) categorical series and author's calculations.

Employment Cost versus Employment Gap, Q2 2021



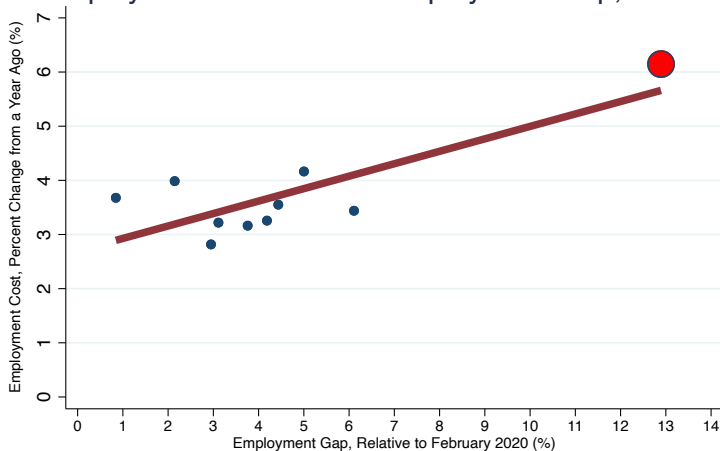
Source: Federal Reserve Bank of St. Louis (FRED) series USPRIV and BLS employment-cost industry-level measures.

Employment Cost versus Employment Gap, Q2 2021



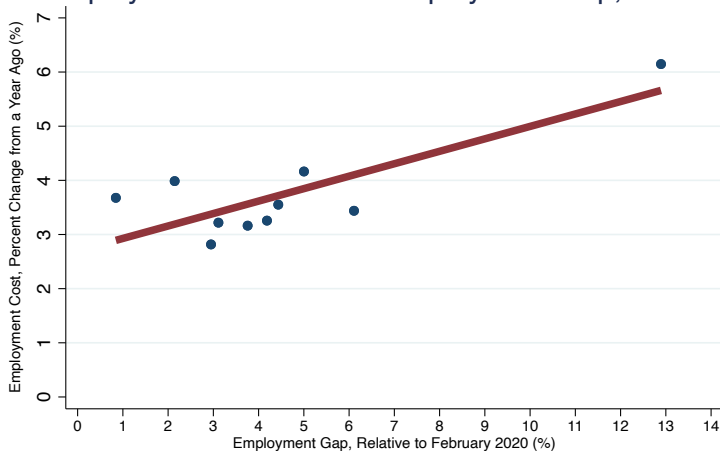
Source: Federal Reserve Bank of St. Louis (FRED) series USPRIV and BLS employment-cost industry-level measures.

Employment Cost versus Employment Gap, Q2 2021



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Employment Cost versus Employment Gap, Q2 2021



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Macroeconomic Policy Responses

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Monetary Policy | Fiscal Policy

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Monetary Policy | Fiscal Policy

money supply and interest rates

Macroeconomic Policy Responses

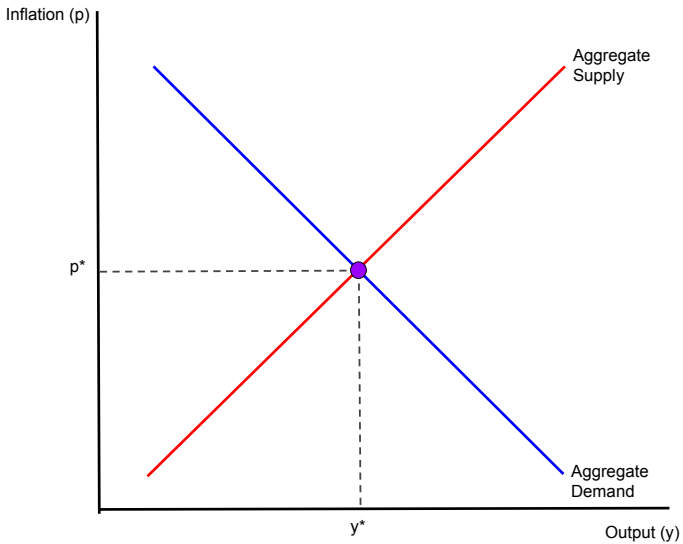
Monetary Policy | Fiscal Policy

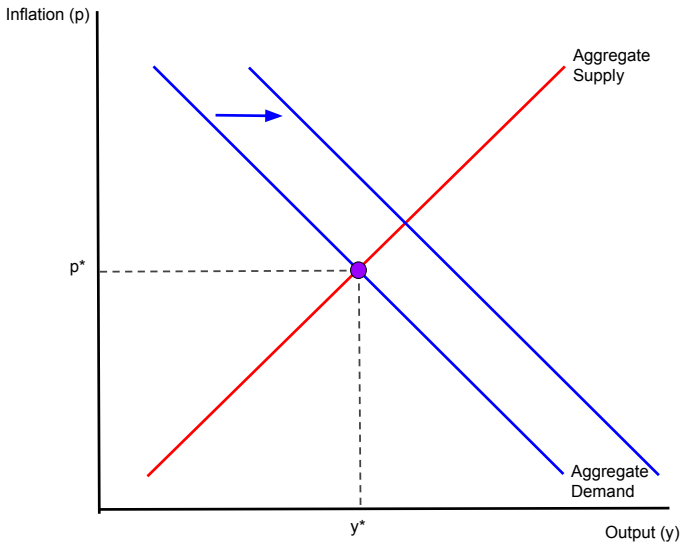
taxes, transfers, and expenditures

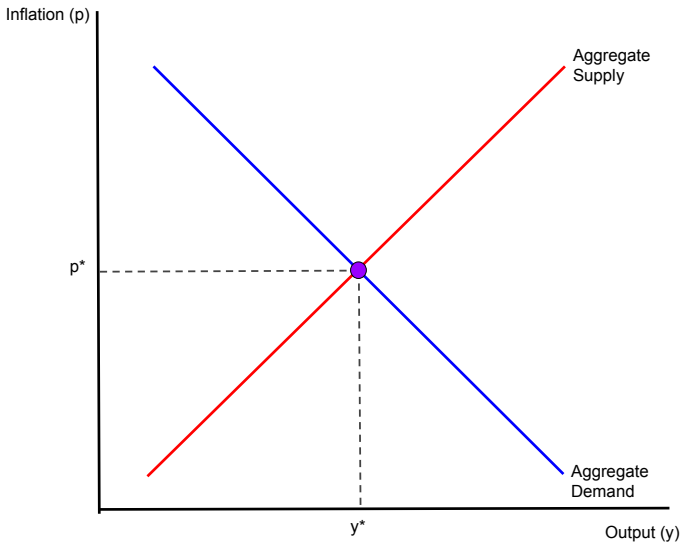
Macroeconomic Policy Responses

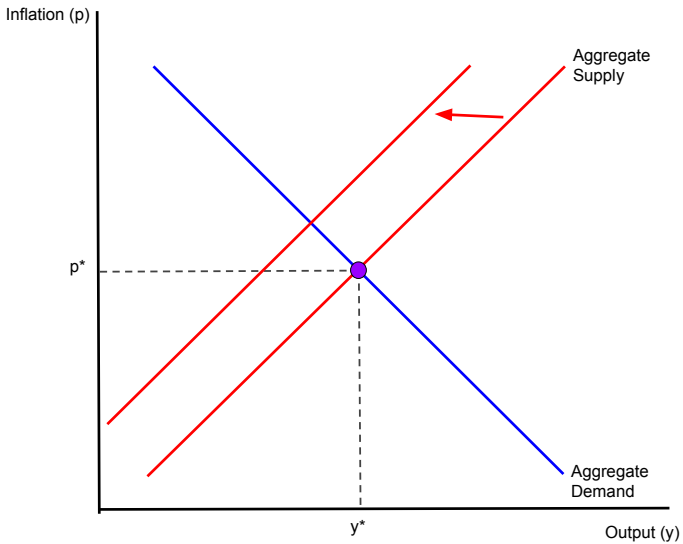
Monetary Policy | Fiscal Policy

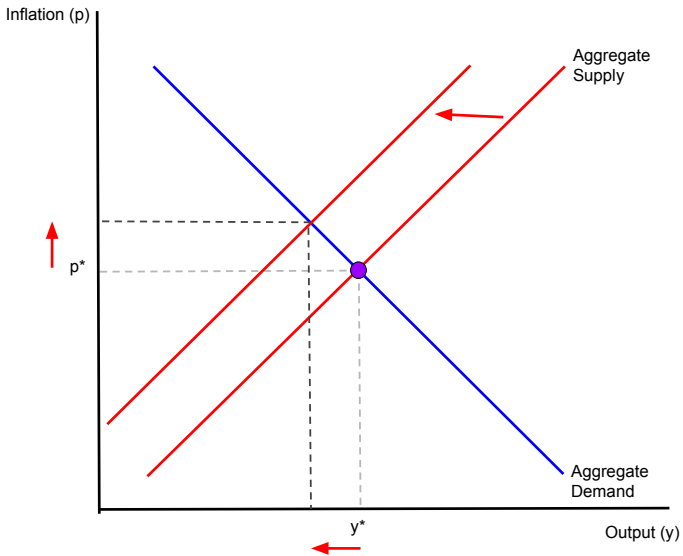
aggregate demand

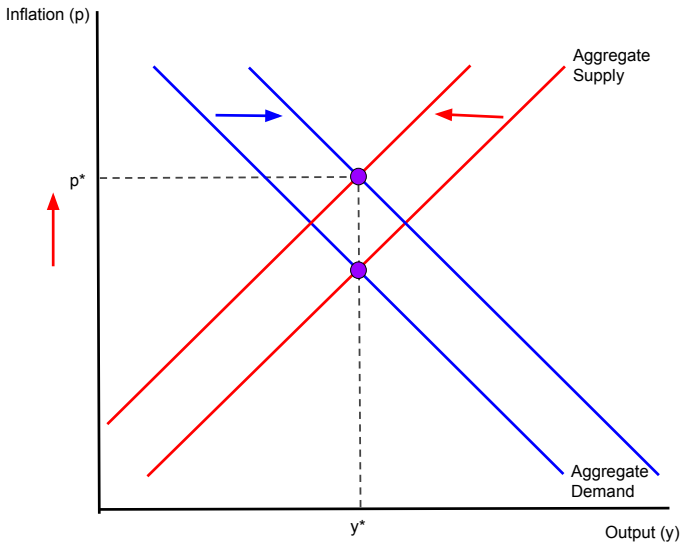












Monetary Policy

Monetary Policy

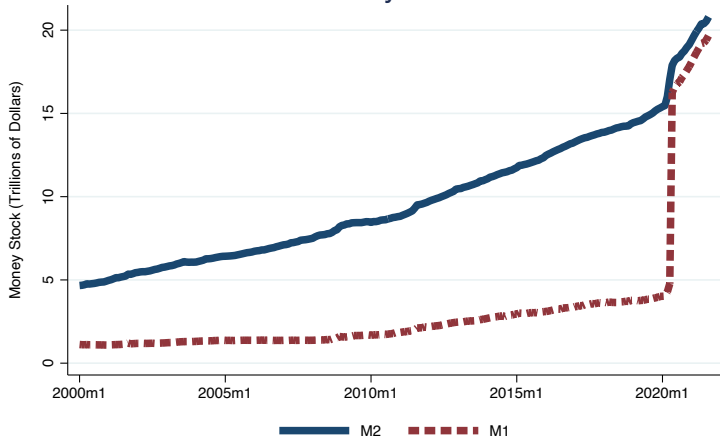
M&Ms | Rates | Exit velocity

Monetary Policy

M&Ms | Rates | Exit velocity

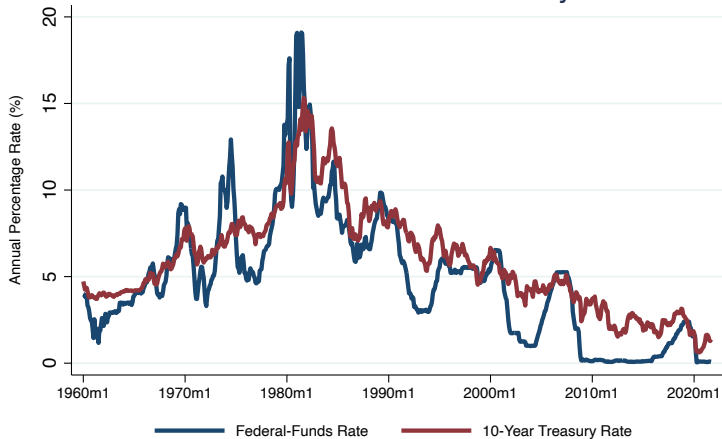
always and everywhere

Money Stock



Source: Federal Reserve Bank of St. Louis (FRED) series M1SL & M2SL.

Fed-Funds and 10-Year Treasury Rates



Source: Federal Reserve Bank of St. Louis (FRED) series FEDFUNDS & GS10.

Income Velocity of M2 Money Stock



Source: Federal Reserve Bank of St. Louis (FRED) M2V.

Fiscal Policy

Fiscal Policy

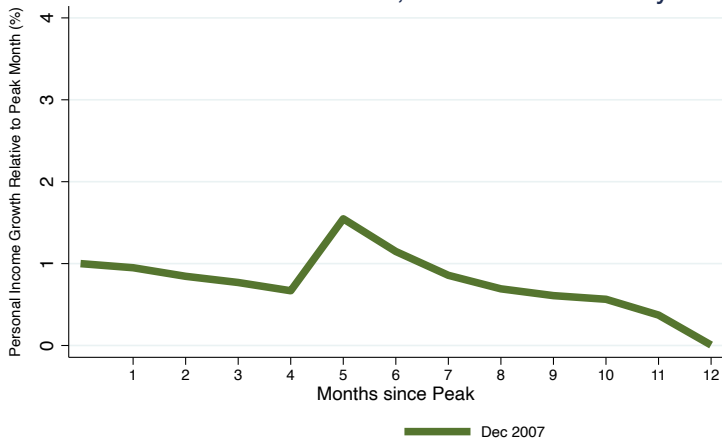
Personal Income | Government Debt

Fiscal Policy

Personal Income | Government Debt

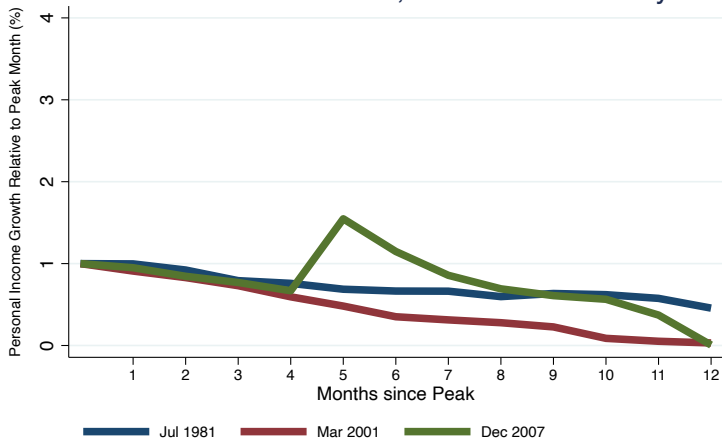
fiscal therapy

Personal Income Growth, Select Business Cycles



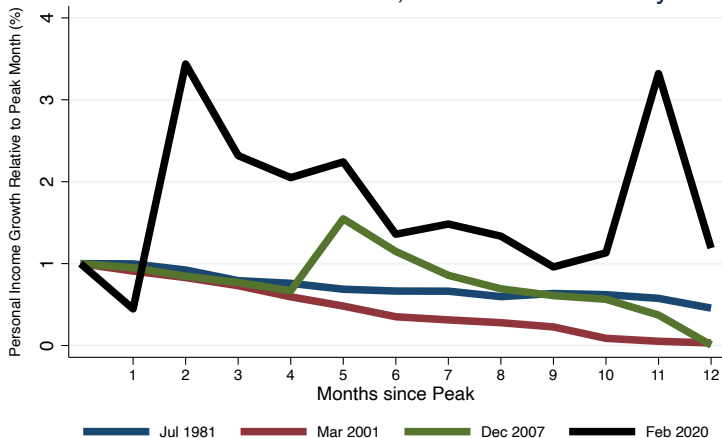
Source: Federal Reserve Bank of St. Louis (FRED) series PI and author's calculations.

Personal Income Growth, Select Business Cycles



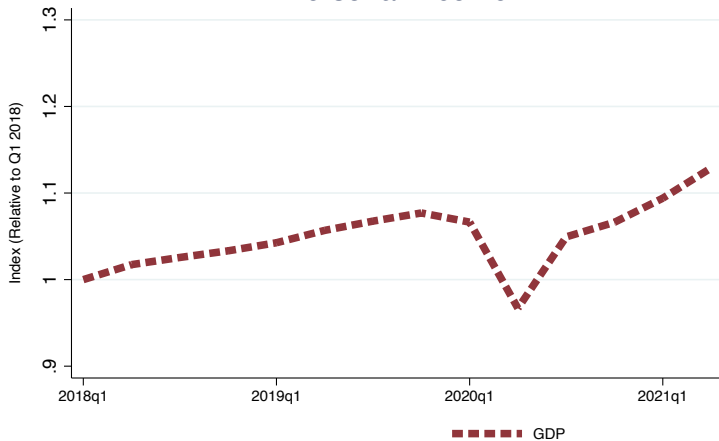
Source: Federal Reserve Bank of St. Louis (FRED) series PI and author's calculations.

Personal Income Growth, Select Business Cycles



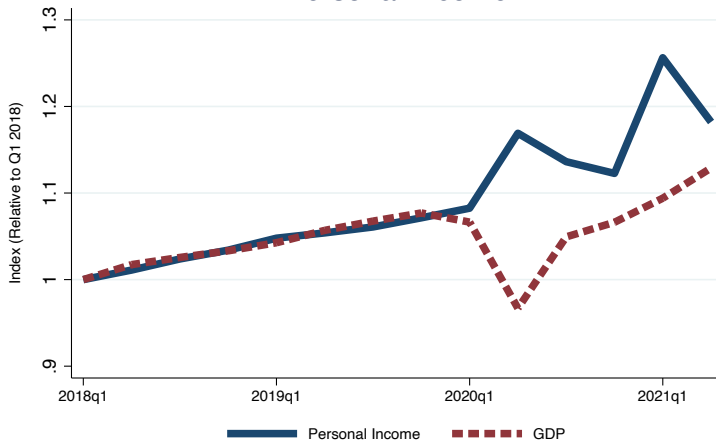
Source: Federal Reserve Bank of St. Louis (FRED) series PI and author's calculations.

Personal Income



Source: Author's calculations; Federal Reserve Bank of St. Louis (FRED) GDP & PINCOME.

Personal Income



Source: Author's calculations; Federal Reserve Bank of St. Louis (FRED) GDP & PINCOME.

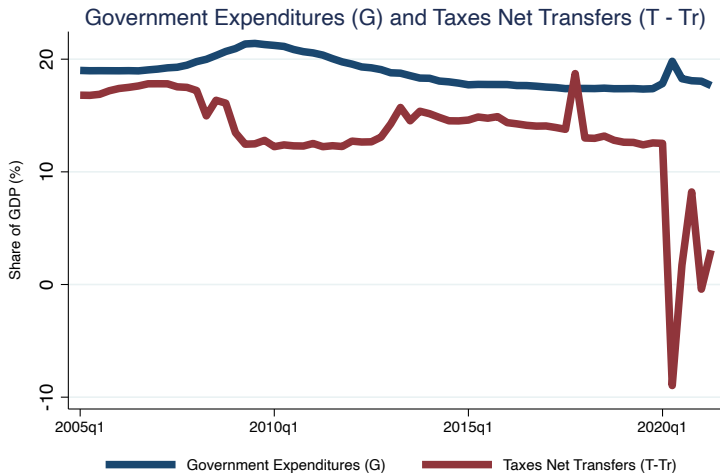
Fiscal Policy

Personal Income | Government Debt

Fiscal Policy

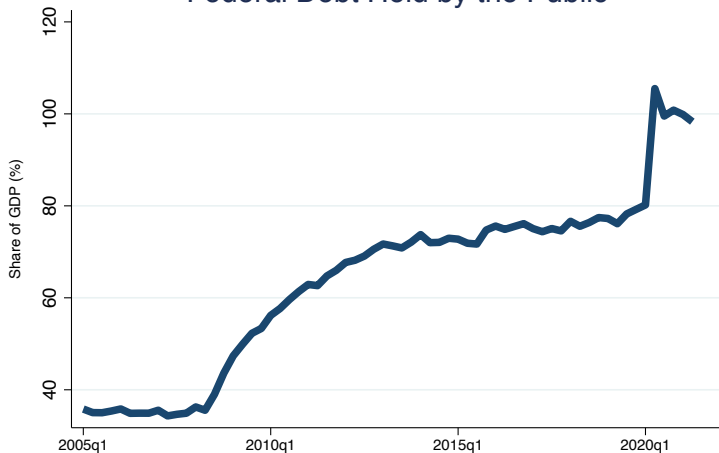
Personal Income | Government Debt

fiscal space

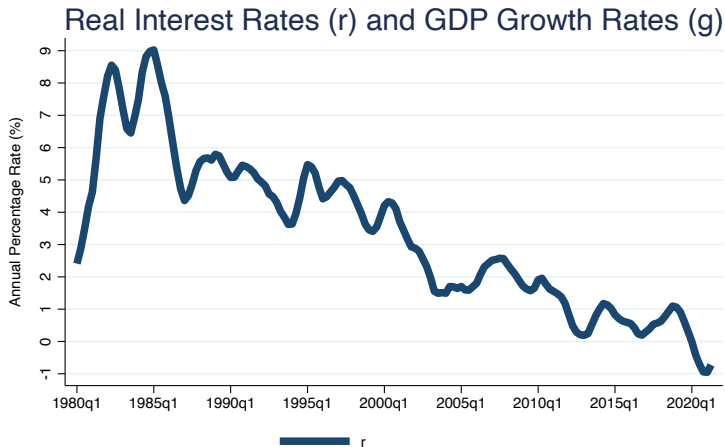


Source: Federal Reserve Bank of St. Louis (FRED) series FGEXPND, GCE, GDP, W018RC1Q027SBEA, and W006RC1Q027SBEA.

Federal Debt Held by the Public

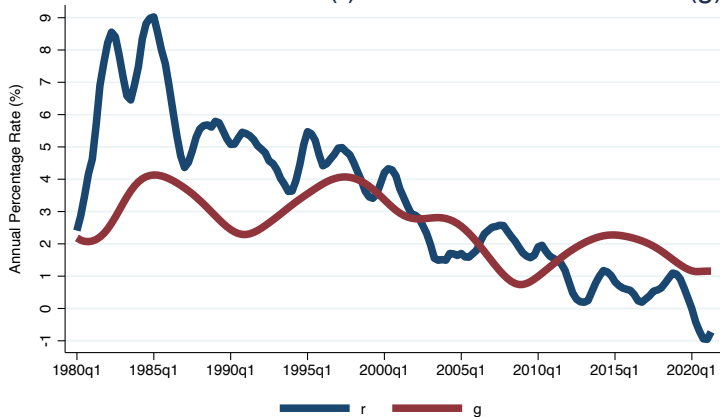


Source: Federal Reserve Bank of St. Louis (FRED) series FYGFGDQ188S.



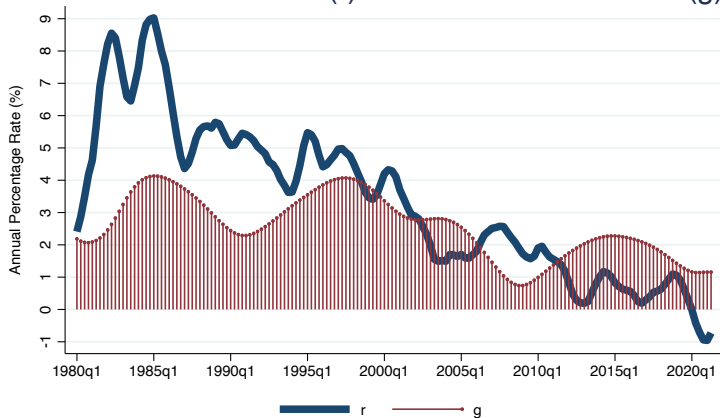
Source: Author's calculations; Federal Reserve Bank of St. Louis (FRED). r measures the four-quarter moving average of the ex-post real constant yield to maturity on the 10-year US Treasury bond (based on the annualized quarterly growth rate of the HP-smoothed GDP deflator); g measures the annualized quarterly growth rate of HP-smoothed real GDP.

Real Interest Rates (r) and GDP Growth Rates (g)



Source: Author's calculations; Federal Reserve Bank of St. Louis (FRED). r measures the four-quarter moving average of the ex-post real constant yield to maturity on the 10-year US Treasury bond (based on the annualized quarterly growth rate of the HP-smoothed GDP deflator); g measures the annualized quarterly growth rate of HP-smoothed real GDP.

Real Interest Rates (r) and GDP Growth Rates (g)

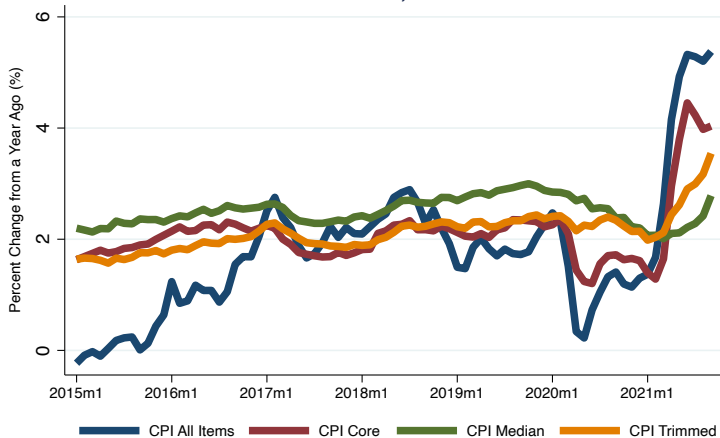


Source: Author's calculations; Federal Reserve Bank of St. Louis (FRED). r measures the four-quarter moving average of the ex-post real constant yield to maturity on the 10-year US Treasury bond (based on the annualized quarterly growth rate of the HP-smoothed GDP deflator); g measures the annualized quarterly growth rate of HP-smoothed real GDP.

Inflationary Pressures

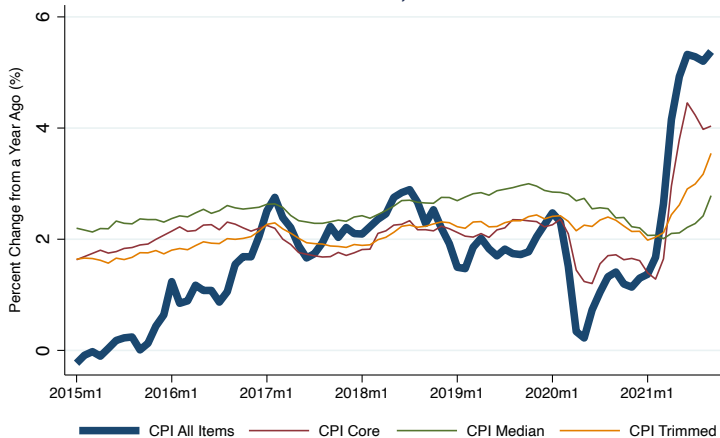
by measure

Consumer Inflation, Select Measures



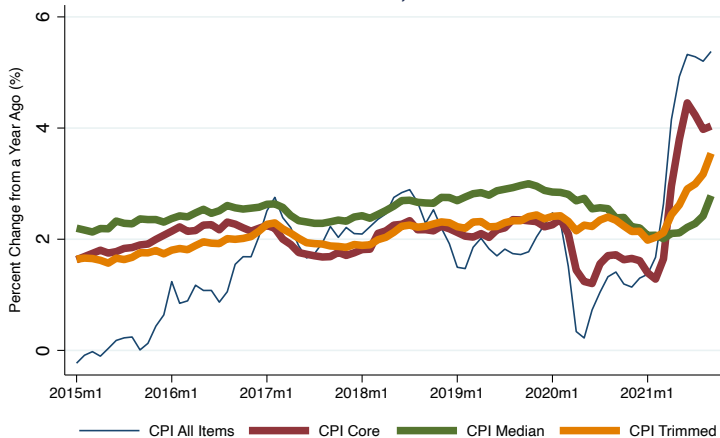
Source: Federal Reserve Bank of St. Louis (FRED) series CPIAUCSL, MEDCPIM094SFRBCLE, & TRMMEANCPIM094SFRBCLE.

Consumer Inflation, Select Measures

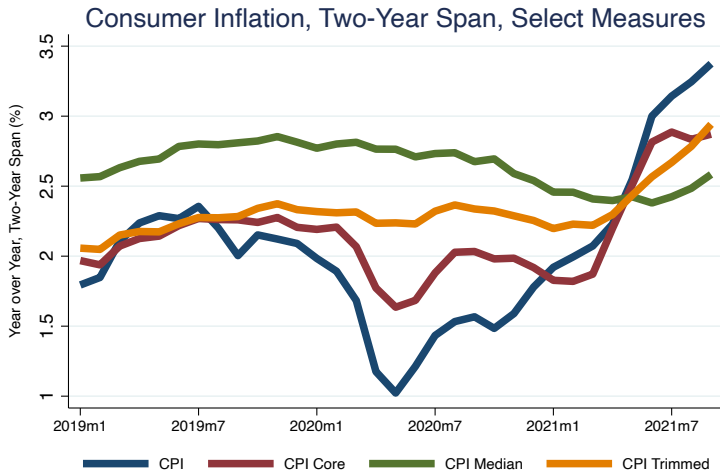


Source: Federal Reserve Bank of St. Louis (FRED) series CPIAUCSL, MEDCPIM094SFRBCLE, & TRMMEANCPIM094SFRBCLE.

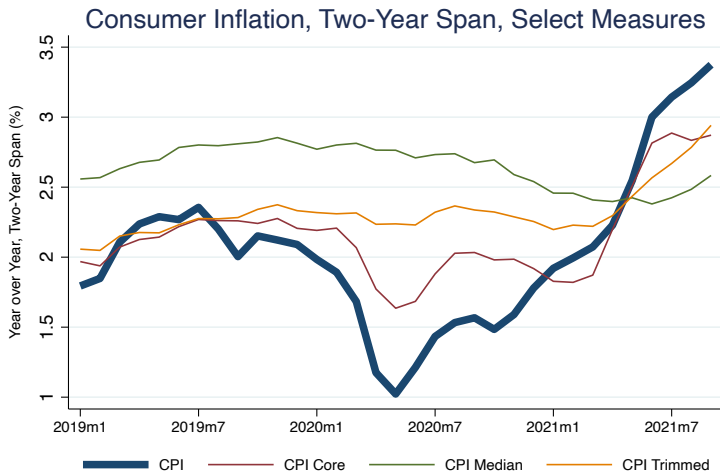
Consumer Inflation, Select Measures



Source: Federal Reserve Bank of St. Louis (FRED) series CPIAUCSL, MEDCPIM094SFRBCLE, & TRMMEANCPIM094SFRBCLE.



Source: Federal Reserve Bank of St. Louis (FRED) Select CPI Series & Author's Calculations.

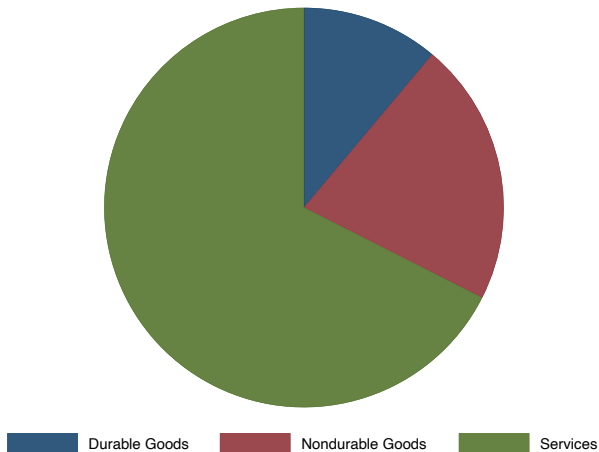


Source: Federal Reserve Bank of St. Louis (FRED) Select CPI Series & Author's Calculations.

Inflationary Pressures

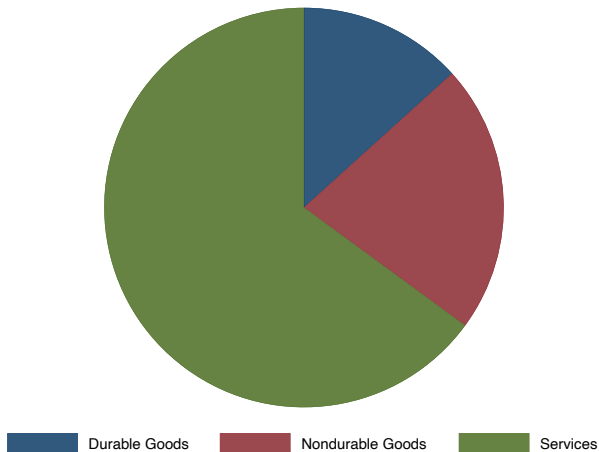
by category

Personal Consumption Expenditure Shares, Q4 2019



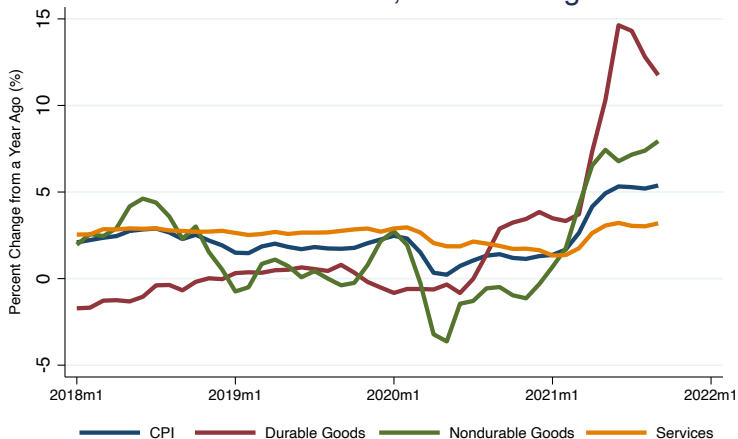
Source: U.S. Bureau of Economic Analysis

Personal Consumption Expenditure Shares, Q2 2021



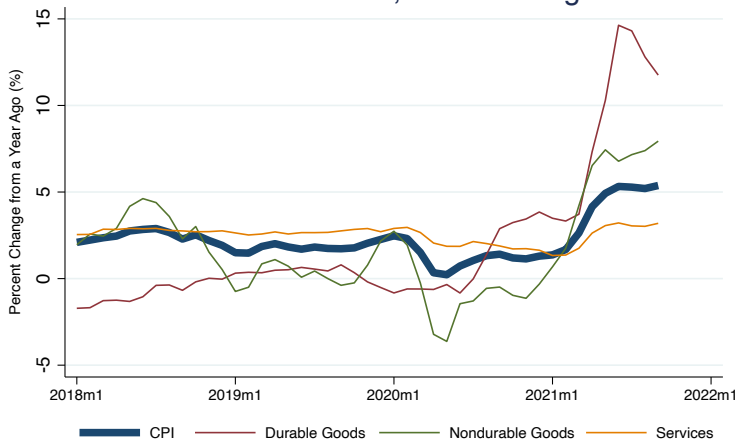
Source: U.S. Bureau of Economic Analysis

Consumer Inflation, Select Categories



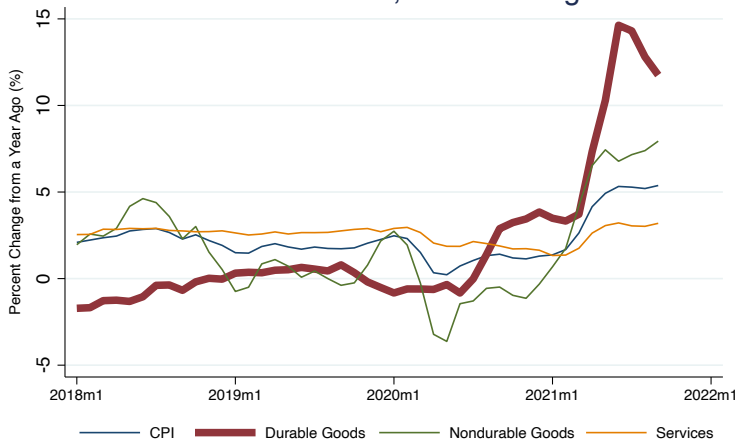
Source: Federal Reserve Bank of St. Louis (FRED) series CPIAUCSL, CUSR0000SAD, CUSR0000SAN, & CUSR0000SAS.

Consumer Inflation, Select Categories



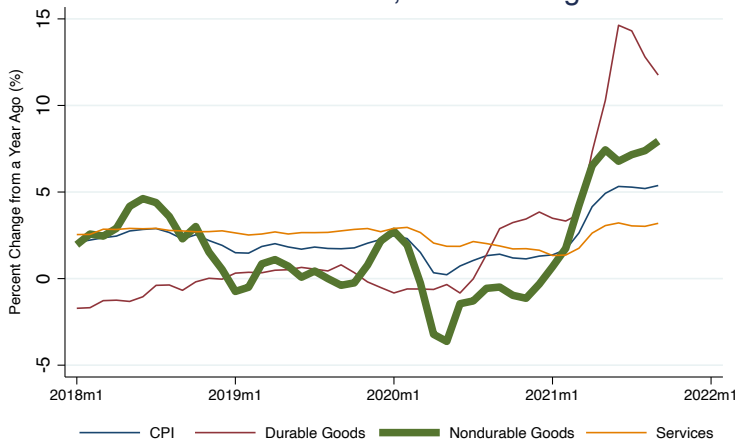
Source: Federal Reserve Bank of St. Louis (FRED) series CPIAUCSL, CUSR0000SAD, CUSR0000SAN, & CUSR0000SAS.

Consumer Inflation, Select Categories



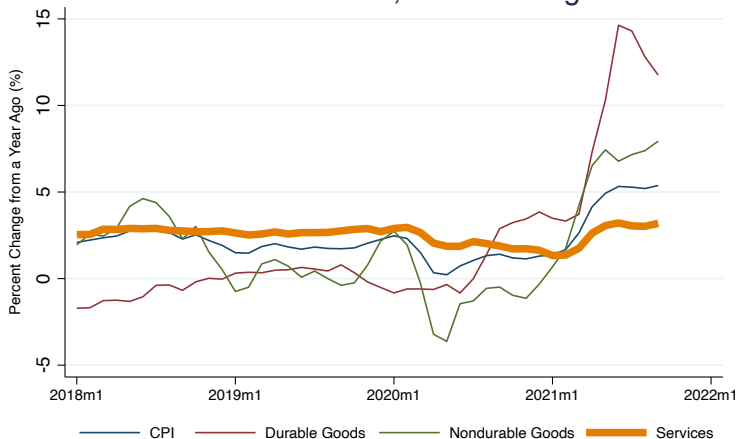
Source: Federal Reserve Bank of St. Louis (FRED) series CPIAUCSL, CUSR0000SAD, CUSR0000SAN, & CUSR0000SAS.

Consumer Inflation, Select Categories



Source: Federal Reserve Bank of St. Louis (FRED) series CPIAUCSL, CUSR0000SAD, CUSR0000SAN, & CUSR0000SAS.

Consumer Inflation, Select Categories

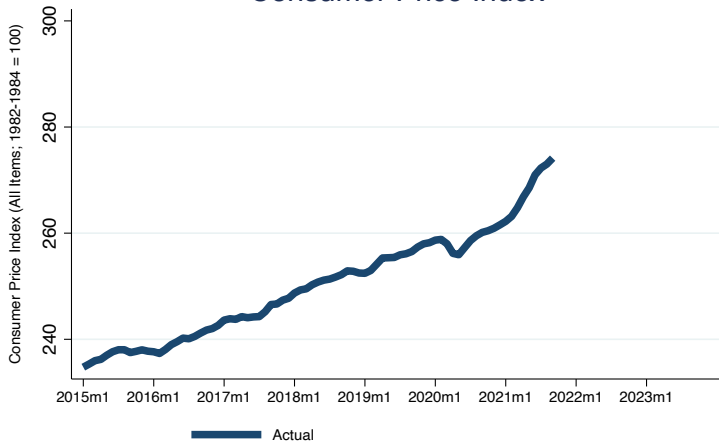


Source: Federal Reserve Bank of St. Louis (FRED) series CPIAUCSL, CUSR0000SAD, CUSR0000SAN, & CUSR0000SAS.

Inflationary Pressures

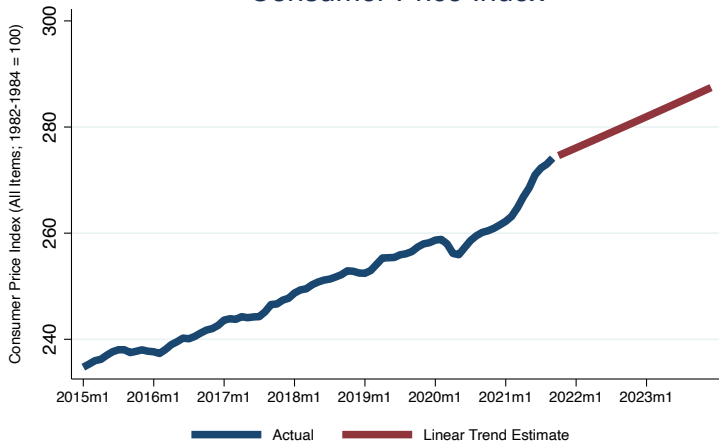
by construction

Consumer Price Index



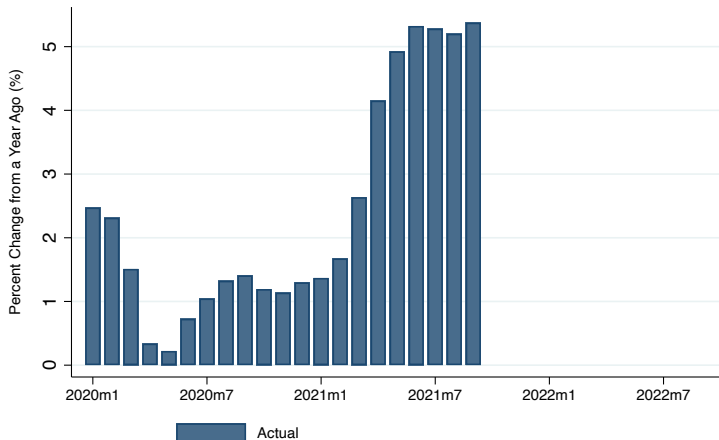
Source: Federal Reserve Bank of St. Louis (FRED) series CPIAUCSL and author's calculations.

Consumer Price Index



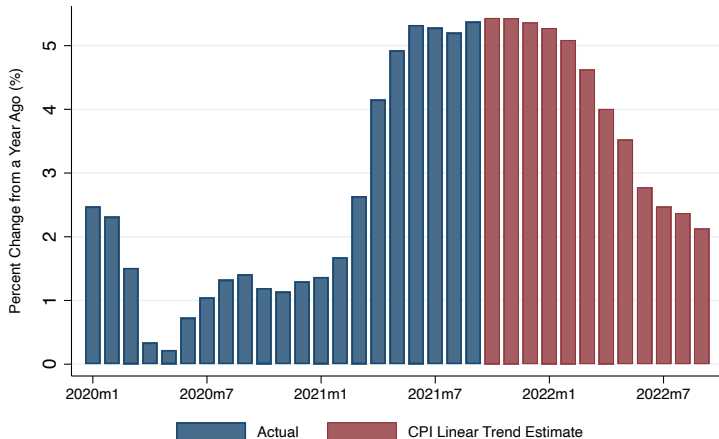
Source: Federal Reserve Bank of St. Louis (FRED) series CPIAUCSL and author's calculations.

Consumer Inflation



Source: Federal Reserve Bank of St. Louis (FRED) series CPIAUCSL and author's calculations.

Consumer Inflation

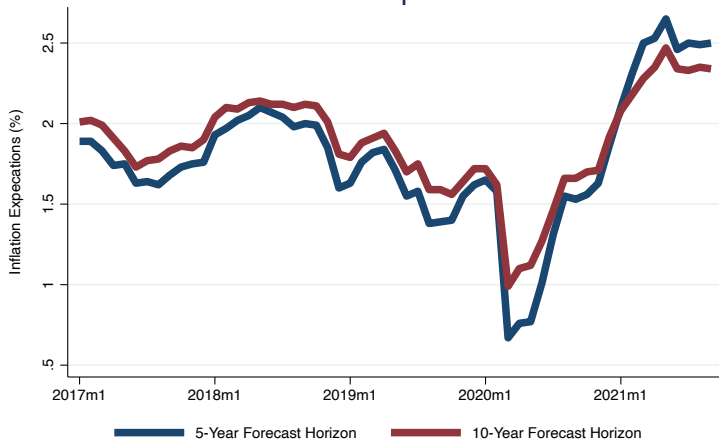


Source: Federal Reserve Bank of St. Louis (FRED) series CPIAUCSL and author's calculations.

Inflationary Pressures

by action

Inflation Expectations



Source: Federal Reserve Bank of St. Louis (FRED) series T5YIEM and T10YIEM.

Thank you